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ABSTRACT

This manuscript reports the results of the work of a committee appointed by the Council of Educational Facility Planners International (CEFPI) to deal with ways of providing opportunities for the orientation and training of school administrators, facility planning specialists, facility managers, educational planners, and education oriented groups such as school board members. The first section states the need to familiarize general administrators with concepts, principles, and acceptable practices in comprehensive educational planning, educational facilities planning, and educational facilities management. This is followed by suggested course descriptions, goals and topics for familiarization courses for general administrators and practitioners in comprehensive educational planning, educational facilities planning, and educational facilities management. Needed competencies of the two types of school plant specialists--the school plant management specialist and the school facilities planning specialist--and a program of study for each with course descriptions are presented. Suggestions are made regarding a continuing program of career development for educational facilities specialists. The final section provides suggestions for a systematic orientation program for lay and related professional groups including preservice and inservice training for architects. (Author/MLF)

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A Special Committee Report Sponsored

by the Board of Directors of CEFPI on

PREPARATORY AND CAREER DEVELOPMENT PROGRAMS

for the

EDUCATIONAL FACILITIES SPECIALIST

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

by

Carroll W. McGuffey, D.Ed.

Chairman of the Ad Hoc Committee

on the Professional Education and Training

of the Educational Facilities Specialist

1977

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Foreword

The changing world of socio-economics, communications, technology and transportation continues to impose relentless pressures on the education of the young and on those who would dare provide that education. The ever-increasing rate at which the future invades the present makes the problems of planning for that education and its physical plant increasingly more difficult to solve and the solutions far less predictable than they ever have been or shall be again.

The school facilities specialist has come of age and now occupies a key position in education seeking a physical environment that encourages educational improvement and that enhances appropriate pupil and teacher behavior. CEFPI is interested and concerned that new generations of educational facilities specialists are prepared to cope with the new pressures and changes that are generated and have the knowledge and skill to do an even better job than their predecessors. It is to this end that this report attempts to make a contribution.

It has been a privilege to work with such a distinguished group of facilities experts.

C. W. McGuffey, Chairman
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Training Committee

I

Introduction

Background

The Council of Educational Facilities Planners has maintained a continuing interest in the professional preparation of educational specialists engaged in educational facilities planning and management. One of the standing committees established by the Council's By-Laws was the Professional Activities Committee (PAC). The PAC was charged with the responsibility for reviewing, evaluating and making recommendations with respect to the preparation of professional workers in the area of educational facilities (NCSC, By-Laws adopted October 10, 1963). In 1970 a new set of By-Laws was adopted by the Council which changed the name from the National Council on Schoolhouse Construction to the Council of Educational Facility Planners International. A revised statement of purpose provided for "the improvement of training programs for educational facility planning specialists in colleges and universities." Standing committees were replaced by the appointment of ad hoc committees subsequent to the adoption of the new by-laws in 1970.

In 1973, an ad hoc committee was appointed to deal with alternative ways of providing opportunities for the orientation and training of school administrators, facility planning specialists, facility managers, educational planners and education oriented groups such as school board members. The committee organized its members into three sub-committees concerned with three major thrusts of the committee's charge:

1. Professional pre-service training programs: courses of study, curriculum content and competency development.

2. Continuing education program: workshops, conferences, seminars, institutes and short courses.

3. Orientation and familiarization program: orientation and familiarization short courses and workshops for building committees and school board members.

The purpose of this manuscript is to report the results of the work of the Professional Education and Training Committee.

Statement of Need

Rapid change is an accepted phenomenon of our times. Following World War II this nation's schools experienced unprecedented growth. Birth rates and the numbers of births rose astronomically. School enrollments increased dramatically and school expenditures spiralled. School districts lagged far behind in the task of providing needed classrooms

for what appeared to be a never-ending stream of children and youth knocking on the schoolhouse door.

The growth that took place in the fifties and sixties was soon to be replaced with a decline in enrollments across the nation. In 1955 the nationwide enrollment was 30.5 million, in 1971 the enrollment peaked at 46.1 million and by 1975 it had declined to 44.8 million pupils (Foster & Carpenter, 1976). The sharp rise in enrollments followed by a decline has complicated the planning and development of educational facilities.

The high mobility of the American people is a well-documented fact. The reports of the U.S. Census and statistics taken from Bureau of the Census mobility studies illustrate the nature of this problem. Data reported by the Bureau of the Census showed that people move constantly from neighborhood to neighborhood, community to community, county to county and state to state (U.S. Census Bureau, 1970). The constant shifting of the population has created and continues to create schoolhousing needs and adds substantially to an already complex problem of providing badly needed facilities.

Changes in school programs have made the problem of constructing adequate school facilities a never-ending one. Providing school facilities is like the old adage about woman's work, it is never done. The extension of school programs upward and downward to include adult education, community colleges, vocational education, kindergarten and

pre-primary education requires modernized or preferably, new facilities. Curriculum changes, changes in class size, differentiated staffing, changes in pupil-teacher ratios, the use of new media and new developments in learning concepts and teaching strategies keep planners and administrators actively planning either new facilities or the modernization of existing ones.

The energy crisis and the school building problems related to it complicate facilities planning and development. New developments in solar energy are emerging as the search continues for solutions. What new challenges are on the horizon? What does the future hold for the field of educational facilities planning?

During the period of school expansion in the fifties and sixties, school districts employed a variety of personnel to plan and manage school building programs. Drake (1965) studied the educational and experiential backgrounds of school plant specialists who were members of the National Council on Schoolhouse Construction and found that there were many kinds of school plant specialists but that the educational facilities planner had been in evidence only fifty to sixty years (p. 53). Drake also found a growing need for the educational facilities planner.

At least two other studies have been conducted to determine the existence of educational facilities personnel

and their general characteristics. The Professional Activities Committee of the Council (NCSC) (1964) surveyed 38 California Districts of 10,000 pupils and larger (p. 101). Twenty-seven school districts responded indicating that only five had school planning specialists on their staffs. Nineteen indicated the need for additional training for personnel on their staffs. Ten indicated that they would employ school plant specialists if they were available. McGuffey (1969) surveyed school districts in thirteen Southeastern states to determine how many school plant specialists were employed by these school districts, how many vacancies then existed and the number of school plant positions that school districts anticipated establishing in the near future. Seven hundred ninety-three school districts responded ranging in enrollment from 253 to 230,586 pupils. McGuffey (1969) found that 298 of the 793 systems reporting had one or more staff level positions with responsibilities for school plant planning, construction, maintenance or custodial services. Of the 495 remaining, 67 indicated that they planned to establish such a position or positions in the near future. A total of 6,968 personnel were reported as being employed in school plant positions in the 793 school districts. The number of personnel responsible for school plant planning was 251 with another 116 positions to be established in five years. Four hundred and seventy-seven positions were reported with responsibilities

for supervising or managing school building maintenance programs and 131 new positions were to be established in five years. According to McGuffey (1969), vacancies were estimated in approximately 63 planning and management positions.

Need for Preparation Programs

Several studies have surveyed the school plant courses offered by colleges and universities. Others have examined the need for courses and programs of study for school plant specialists.

Hamon (1959) studied the content of school plant courses and examined background data relative to the need for improving the preparation of school plant specialists. He gave catalog descriptions of 120 school plant courses in 105 different institutions (p. 1). Seventy-seven of the courses were designated for principals and superintendents and 34 were offered for the preparation of specialists as well as principals and superintendents (Hamon, 1959, p. 25). Only nine courses were offered for school plant specialists. Hamon (1959) also reported that only a small percentage of those who had taken the specialty courses had been employed in a school plant position (p. 25). It was Hamon's (1959) conclusion that four or five strategically located graduate schools of education should offer extensive programs for the preparation of school plant specialists (p. 25).

Chase (1964) reported the following:

> An inquiry was sent to 390 graduate schools, colleges or departments of education requesting the following information:
>
> 1. The title and catalogue description of the course.
>
> 2. The number of times the course has been or will be offered.
>
> 3. The major topic areas included in the course.
>
> Of these 390 institutions 186 indicated that some 233 separate school plant courses were offered during the regular years and summer term inclusive, either on a quarter or semester basis. There was an average of 97 different school plant courses offered during each of the summer terms between 1959 and 1964, and an average of 140 each year during the academic years 1959-1963. (Chase, 1964, p. 52)

Chase (1964) also reported the major topic areas included in the courses and the frequency with which they were covered as follows:

Major Topic	Frequency
a. Philosophy of school building planning	150
b. School building surveys	147
c. Planning functional facilities	155
d. Developing educational specifications	157
e. Functions and responsibilities of board of education, superintendent, architect, educational consultant and others in the building program.	158
f. Administering the school construction program.	125
g. Building costs and economies	147
h. Financing the school building program (capital outlay)	134
i. Maintenance and operation	122
j. Furniture and equipment	129
k. School site, selection and utilization	160
l. School building design problems	126

Drake (1965) described the school plant specialists educational and experiential backgrounds and concluded that the educational facilities planner should be an educator, should be knowledgeable of the skills for understanding and working with people and should be familiar with various aspects of the educational program, particularly curriculum (p. 87). Sociology and urban planning were found to be

desirable minor or cognate areas at the graduate level. Related courses considered to be helpful to planners were finance, school law. sociology, administration, and curriculum (Drake, 1965 p. 87).

Griggs (1968) studied the problem of providing a program of preparation for training school plant planning specialists and prepared a set of behavioral goals as a basis for the development of a program of studies. He identified five major tasks in school plant planning as follows:

1. Determining the need for a building program.
2. Planning school buildings.
3. Developing the architectural plan.
4. Occupying, equipping, staffing and utilizing the facility.
5. Miscellaneous tasks in school planning.

II

User Orientation and Familiarization

Background

According to Hamon (1959), Drake (1965) and Griggs (1968), most school plant courses taught in colleges and universities were designed to provide an overview of school plant problems and issues for general administrators including principals and superintendents. Such courses are limited in scope and depth and are not suitable for the purpose of preparing school plant specialists. Hamon (1959) and Chase (1964) reported the types of courses offered and provided brief descriptions of such courses. Dibs (1963) examined the content of school plant courses offered to administrators and recommended the contents of a basic school plant course. He recommended that a school plant course should be included in the credential requirements for administrative positions higher than the principalship and encouraged all other administrators to include a school plant course in their professional education. Morissey (1965) analyzed the administrative and supervisory responsibilities of school plant management personnel and identified nine major areas of responsibility which included administration, maintenance, construction, inspection, personnel, purchasing, finance, records and reports and

legal matters. Morissey (1968) identified the emergence of the area of comprehensive educational planning as seen by the panel of experts he used in his analysis of the problem related to the training of educational facilities planning specialists.

The need to familiarize general administrators with concepts, principles and acceptable practices in comprehensive educational planning, educational facilities planning and educational facilities management was a matter of factual evidence. This section includes suggested course descriptions, goals and topics for familiarization courses for general administrators and practitioners in comprehensive educational planning, educational facilities planning and educational facilities management.

Comprehensive Educational Planning

Purpose

It is the purpose of this course to cause students to become aware of planning as an area of study, gain an understanding of the theory, application, implementation and political limitations of planning (rational) models, and increase students' knowledge, skills and understandings in the use of rational models in educational planning.

Goals

1. The student will be able to identify, discuss and analyze a particular situation relative to the planning function.

2. The student will be able to describe "systems" as a conceptual model of an organization.

3. The student will gain an understanding of the accountability movement.

4. The student will be able to apply a planning model to a specific situation.

5. The student will be able to describe, explain, apply and integrate at least two major aspects or techniques of planning into an applied plan.

6. The student will be able to apply planning concepts, skills, understandings and techniques to a situation-specific plan, the content of which will be of his own choosing.

Course Topics

1. Planning:
    a. Definition and description
    b. Limitations - political, applied
    c. Types
    d. Environment
    e. Organization
    f. Rational Models
    g. Accountability legislation
2. Systems:
    a. Definition, description and explanation
    b. Limitations
    c. Application in planning
3. Review of planning models:
    a. Components

b. Relationship of components

c. Rationale: components and relationships

4. Applying a model:

How it works--an example

5. Overview of other aspects and techniques of planning:

a. Futures and futurology

b. Evaluation

c. Program analysis

d. PPB, PPBS, PPBSS, PPBES, ERMS, etc.

e. GANTT

f. PERT - CPM

g. Computer applications

Educational Facilities

Planning

Purpose

This course is intended to familiarize students of school administration with the school plant, its basic elements, and how it functions in relation to the curriculum and services of the school program. It is a familiarization course providing opportunities for students to become better acquainted with school plant planning, development and management practices.

Goals

1. Students will become acquainted with the problems which school administrators face in providing adequate school facilities for education.

2. Students will be taught the basic understandings required for an administrator to function effectively in his role as an educational leader in the school plant planning, development and management program.

3. Students will become familiar with both the technical and the administrative practices in school building planning, development and management so that they may perform more adequately in planning school plant programs and work more effectively with the technical building professions.

4. Students will explore in a general way the processes and techniques for the provision of school facilities to meet growing enrollments and changing educational programs.

5. Students will study the proper role of the professional educator in the planning of facilities in relation to that of the professional architect, engineer and other technical professions.

6. Students will develop the skills for more effective communication with the lay public and the building professions as a basis for interpreting school building needs and problems in the administration of the school program.

7. Students will become familiar with changing federal laws and court decisions and their implications for school facilities planning.

Course Topics

1. Philosophical considerations as background for educational facility planning.

   a. Needs of children

b. Needs of the school community

c. Environmental influences on learning and behavior

d. Educational program as basis for facilities plans.

2. Developing long-range plans

a. Determination of needs

b. Appraisal of existing facilities--present and possible utilization.

c. Establishing priorities

3. Educational plant planning--human resources

a. Roles of school personnel

1. School board

2. Superintendent and his staff

3. Instructional staff

4. Non-instructional personnel

5. Pupils

b. Citizen involvement

c. Technical personnel

1. Educational consultants

2. Architects

3. Engineers

4. City and regional planners

5. State educational agency

6. Regulatory agencies--state and local

7. Legal counsel

8. Contractors

4. Development of educational specifications

a. Site considerations

1. Requirements

2. Selection

3. Planning for development

4. Trends--joint use, air-rights, etc.

b. Elementary school requirements

1. Nature of the elementary school

2. Nature of elementary instructional programs

3. Program implications for the plant

(a) Early childhood

(b) Kindergarten

(c) Primary

(d) Upper elementary

4. General purpose instructional spaces

5. Special instructional areas

6. Auxiliary areas

7. Furniture and equipment

8. Trends

c. Junior high and middle school requirements

(Similar treatment as given elementary schools, except attention also given to subject areas)

d. Senior high school requirements

(Similar treatment as junior high/middle schools, with vocational-technical faiclities also emphasized)

e. Post high school program requirements

f. Requirements for administrative centers

g. Requirements for building service areas

h. From program requirements to educational specifications

1. How developed

2. Essential elements

3. Participants

5. Environmental considerations

a. Thermal

b. Visual

c. Acoustical

d. Spatial

6. Design considerations

a. Safety factors

b. Aesthetic factors

c. Economy factors

d. Maintenance factors

e. Energy conservation factors

7. Financial considerations

a. Means of financing capital outlay programs

b. Renovation, alteration and modernization

8. Administering the building program

a. Selection of delivery system

1. Traditional--selection of architect, bid documents, contractors

2. Design--build

3. Construction management

b. Supervision of construction

9. Occupying the plant
   a. Orienting users
   b. Evaluation

Educational Facilities Management

Purpose

The purpose of this course is to provide administrators with learning experiences in the technical specialty of managing educational facilities. The course provides an overview of concepts, processes and practices in the operation, financing, maintenance, modernization and construction of the educational plant.

Goals

1. Students will become familiar with the principles and procedures of organizing and staffing the school plant management program of the school district.
2. Students will develop skills in budgeting for capital improvements and acquire knowledge about financing capital outlay programs.
3. Students will become familiar with the procurement and use of technical services needed in school building programs.
4. Students will be able to describe the various approaches to the management of a construction program.

5. Students will gain knowledge in the maintenance, repair, rehabilitation and modernization of school buildings.

6. Students will be able to identify and understand the major problems involved in managing school operations including custodial services, safety, energy conservation and space allocation and utilization.

7. Students will learn the basic procedures for the inventory of physical properties, the maintenance of records and reporting procedures related to educational buildings.

Course Topics

1. Organizing, staffing and managing the plant management program.

2. Policy development for plant management programs.

3. Capital outlay programs.

4. The capital budget.

5. Planning and organizing a bond referendum.

6. Site acquisition and development.

7. Procuring and managing architectural and engineering services.

8. Procuring and managing construction services.

9. Construction contracts, bonds and insurance.

10. Construction management.

11. Time and cost control methods.

12. Building systems.

13. Physical plant operations (custodial service, safety, energy conservation).

14. Space allocation and utilization (space management).
15. Plant maintenance.
16. Rehabilitation and modernization.
17. Property inventory systems.
18. Legal aspects of educational facilities management.

III

Pre-Service Preparation of the Educational Facilities Specialist

Purpose

The literature is replete with articles and reports to demonstrate that the school plant field was an established specialty as early as 1934. Chapman (1934), Assistant Secretary of the Interior, stated that school plant planning problems were being managed by a trained group of specialists (p. 9). Willower and Culbertson (1964) identified school plant as a field specialty in 1964 (p. 5).

Hamon (1959) identified and described special courses taught in colleges and universities for the specialist in educational facilities. Nine courses were identified in Hamon's study as being offered for school plant specialists. Drake (1965) studied the experiential and educational backgrounds of a group of school plant specialists and found that 47% held the doctorate, an additional 5.6% had completed six year programs and 26.9% had earned Master's degrees. Drake (1965) also indicated from his study of the literature that the school plant specialist first must be an educator. Finance, sociology, school law, curriculum and urban or regional planning were identified by Drake as desired courses

to supplement the general and special courses needed by the school plant specialist.

Morissey (1965) and Drake (1965) indicated that the preparation of school plant planners and school plant managers was largely in the field of educational administration. Griggs (1968) identified two distinct job types in the school plant field: the school plant management specialist and the school facilities planning specialist. Griggs (1968) also proposed a program of instruction for the school facilities planner.

The purpose of this section of the report is to present needed competencies of the two types of school plant specialists, and a program of study for each with course descriptions.

The Educational Facilities Planning Specialist

The educational facilities planning specialist was considered to be a person prepared to give leadership in planning the educational aspects of school buildings. Conducting school district surveys and preparing educational specifications are illustrations of his responsibilities. Competency statements and the suggested program of study were based on the following set of assumptions:

1. The educational facility planner (EFP) is an educator first.

2. The EFP has at least a master's degree in educational administration.

3. The EFP should have had some experience in education as a teacher and/or an administrator.

4. Neither a single course nor group of courses can guarantee successful performance of an EFP.

5. Individual differences should be recognized in developing a course of study for individual persons.

6. Preparation for any specialty is literally a never-ending process.

7. Formal learning experiences will be supplemented with directed field experience.

Competency statements. The following set of competencies were prepared by McGuffey (1977) for the educational facilities planning specialist:

Educational Facilities Planning

1. Determines school plant needs of the school district.

2. Prepares a comprehensive plan for the development and improvement of educational facilities.

3. Prepares educational specifications for proposed new and modernized school plants.

4. Organizes the facilities planning staff to perform its assigned roles and work activities.

5. Recruits, selects and assigns personnel to the facilities planning program.

6. Communicates and informs the staff and others about what the educational facilities planning program is accomplishing.

7. Coordinates the work activities of the educational facilities planning program.

8. Operates a management control system which verifies that facilities planning work activities are conducted in accordance with expectations and which corrects activities when they do not.

9. Provides a system for the continuous appraisal of the educational facilities planning program including the evaluation of educational facilities operated by the school district.

10. Weighs alternatives and their consequences when making decisions about the facilities planning program.

School Construction Management

1. Develops a comprehensive plan for the construction and modernization of school plants in the school district.

2. Formulates an organizational structure for the management of the school construction program.

3. Recruits, selects and assigns personnel to positions and responsibilities in the school construction program.

4. Communicates and informs the staff and others about what the school construction program is accomplishing at various levels within the organization.

5. Coordinates the work activities of the school construction program.

6. Operates a management control system which keeps the school construction program performing in accordance with expectations.

7. Provides a system of continuous and periodic appraisal of the school construction program.

8. Weighs alternatives and their consequences when making decisions about the school plant maintenance program.

Debt Service and Capital Outlay

1. Determines the fiscal requirements for financing the capital improvement program of the school district.

2. Prepares a short and long range plan for the financing of capital improvements in the school district.

3. Determines the methods used to finance capital improvements.

4. Prepares the capital improvement budget.

5. Communicates and informs the staff and others about the fiscal requirements for needed capital improvements.

6. Operates a fiscal control system which monitors capital expenditures and verifies that expenditures are made according to plans.

7. Provides a system for the continuous appraisal of the capital funding and debt service program.

Program of study. The program of study should include approximately 60 quarter hours or 36 semester hours of formal course work. The course work should be at the sixth year or doctoral level. However, exceptions might be made if individual student situations warrant.

1. The Organization and Administration of Education. Current theories of organization and fundamental concepts of the process of administration, administrative theory and its application to school settings.

2. The Economics of Education. Economic and political forces affecting school finance; tax and non-tax revenue sources; expenditure trends; state and federal finance policies; state equalization programs.

3. Legal Aspects of Education. Statutory, constitutional and case law; principles and opinions related to education; the legal structure of public education; legal problems related to constructon, property and contracts.

4. School-Community Relations. Understanding the nature and dynamics of local communities; study of the issues and problems involved in improving community relations programs.

5. Curriculum Trends. Changes in curriculum design and content; forces which affect curriculum development; changing curricular and teaching strategies resulting from selected social forces.

6. Group Dynamics. Group process and dynamics of group behavior; improving behavioral skills in group leadership and membership roles and improving group processes in planning and execution of educational programs.

7. Psychology of Classroom Learning. The learning process; learning activities in the classroom; theory and principles of learning as related to classroom situations.

8. Human Growth and Development. A study of the literature on child and adolescent growth; peer relationships; socio-cultural influences; and determinants of self concepts.

9. Educational Planning. Planning concepts, principles and procedures for system level planning; methods and techniques of comprehensive educational planning; concepts and methods of futurism in education.

10. The Physical Environment of Education. A study of the evolution of educational buildings; the interface between the educational program and physical plant; the impact of the physical environment on teaching, learning and occupant behavior; characteristics of modern educational facilities.

11. Planning and Programming Educational Facilities. Principles, stategies and practices in planning educational facilities; facilities needs assessment stategies and techniques; facilities evaluation models; concepts, processes and practices of programming educational facilities.

12. Practicum in School Plant Administration. Legal problems related to school plant; budgeting and financing capital outlay programs; architect-owner relationships;

contractor-owner relations; and other matters related to the administration of a school building program.

For the doctoral level student, additional courses in research and statistical methods, urban and regional planning, educational resource management, population analysis and a dissertation involving research in educational facilities are suggested. If at all possible, an internship for at least one quarter would be desirable for some students.

Educational Facilities Management Specialist

The educational facilities management specialist was considered to be a person prepared to give leadership in the management of the maintenance, operation, safety and security, inventory and utilization of school plants in a school district. Competency statements and the suggested program of study were based on the following set of assumptions:

1. The educational facility manager (EFM) may or may not be an educator.

2. The EFM should have at least a bachelor's degree in some related technical specialty or in industrial education; preferably, a master's degree in educational administration.

3. The EFM should have had some experience as an educational administrator or as a construction or industrial manager.

4. Individual differences should be taken into consideration in preparing a course of study for individuals.

5. Neither a single course nor group of courses can guarantee successful performance of an EFM.

6. Preparation for any specialty is a continuous process over a professional lifetime.

7. Formal learning experiences will be supplemented with directed field experiences.

Competency statements. The following are the competency statements prepared by McGuffey (1977) for the educational facilities management specialist:

School Plant Maintenance

1. Determines the school plant maintenance needs of the school district.

2. Prepares a comprehensive plan for the management of the school plant maintenance program.

3. Recruits, selects and assigns personnel to the school plant maintenance program.

4. Organizes the school plant maintenance staff to perform the assigned roles and work activities of the maintenance program.

5. Communicates and informs the staff and others about what the school plant maintenance program is accomplishing at all levels within the organization.

6. Coordinates the work activities of the school plant maintenance program.

7. Operates a management control system which keeps the school plant maintenance program performing in accordance with expectations.

8. Provides a system of continuous and periodic appraisal of the school plant maintenance program.

9. Weighs alternatives and their consequences when making decisions about that school plant maintenance program.

School Plant Operations

1. Determines the plant operation needs of the school district.

2. Develops a comprehensive plan for the implementation and management of the plant operations program.

3. Formulates an organizational structure for the implementation of the plant operations program.

4. Recruits, selects and assigns personnel to the plant operations program.

5. Communicates and informs the staff and others about what the school plant operations program is accomplishing.

6. Coordinates the work activities of the plant operations program.

7. Operates a management control system which keeps the school plant operations program performing in accordance with expectations.

8. Provides a system of continuous and periodic appraisal of the plant operations program.

9. Considers alternatives and their consequences when making decisions about the school plant operations program.

Plant Security and Property Protection

1. Prepares a comprehensive plan for the protection and security of school property.

2. Organizes a property protection program.

3. Recruits, selects and assigns personnel to positions in the property protection program.

4. Develops a comprehensive program of fire safety for the schools.

5. Provides a comprehensive plant security program.

6. Coordinates and monitors the fire safety program.

7. Coordinates and monitors the plant security program.

8. Develops and monitors a reporting system for the property protection program.

9. Communicates the needs and accomplishments of the property protection program.

10. Operates a management control system which keeps the property protection program performing in accordance with expectations.

11. Coordinates the evaluation of the property protection program.

School Property Management

1. Develops a comprehensive plan for a property management program that fulfills the needs of the school district.

2. Organizes a property management program.

3. Maintains an up-to-date inventory record of school property owned and/or used by the school district.

4. Establishes a property accounting system.

5. Coordinates and monitors the property accounting system.

6. Provides the continuous evaluation of the adequacy of school property owned and/or used by the school district.

7. Coordinates and monitors the utilization of school property.

8. Makes periodic reports on the status of school properties owned and/or used by the school district.

9. Coordinates the continuous appraisal of the property management program.

Program of Study. The program of study should include approximately 60 quarter hours or 36 semester hours of formal course work. The course work should be at either the fifth year or sixth year level. The program could lead to the doctorate if the conditions met the requirements of a particular institution.

1. The Organization and Administration of Education. Current theories of organization and fundamental concepts of the process of administration, administrative theory and its application to school settings.

2. The Economics of Education. Economic and political forces affecting school finance; tax and non-tax revenue sources; expenditure trends; state and federal finance policies; state equalization programs.

3. Legal Aspects of Education. Statutory, constitutional and case law; principles and opinions related to education; the legal structure of public education; legal problems related to construction, property and contracts.

4. Human Growth and Development. A study of the literature on child and adolescent growth; peer relationships; socio-cultural influences; and determinants of self concepts.

5. Educational Planning. Planning concepts, principles and procedures for system level planning; methods and

techniques of comprehensive educational planning; concepts and methods of futurism in education.

6. The Physical Environment of Education. A study of the evolution of educational buildings; the interface between the educational program and physical plant; the impact of the physical environment on teaching, learning and occupant behavior; characteristics of modern educational facilities.

7. Planning and Programming Educational Facilities. Principles, stategies and practices in planning educational facilities; facilities needs assessment stategies and techniques; facilities evaluation models; concepts, processes and practices of programming educational facilities.

8. Educational Facilities Management. Maintenance and operations processes and techniques; energy conservation; school plant security and protection; property inventory systems; time and cost control methods; rehabilitation and modernization.

9. Personnel Administration. Position analysis and description; personnel recruitment, selection and assignment; employer-employee relationships; performance appraisal; compensation schedules; employee benefits and staff morale.

10. Fiscal Management. Budgeting process and practices; accounting principles and practices; cost analysis; debt service; cash management and support services.

11. Educational Resource Management. Accountability concepts and models; systems concepts in education; program

budgeting; zero base budgeting; resource analysis and forecasting; PPBES and MBO.

12. Practicum in School Plant Management. Legal problems, contracts, contractor-owner relations; repairs of structures; building materials; blueprint reading; inspection procedures; maintenance and operations surveys.

For the doctoral level student, additional courses in research and statistical methods, group dynamics, learning theory, school-community relations and a dissertation involving research in educational facilities management are suggested. Where considered desirable, an internship for at least one quarter should be scheduled.

IV

Continuing Education for Educational Facilities Specialists

Purpose

The practicing educational facilities specialist may not have had formal pre-service preparation in either educational facilities planning or educational facilities management. Studies show that many persons who have taken courses in educational facilities were not always employed in school plant positions (Hamon, 1958). Approximately 44% of the school plant specialists surveyed by Drake (1965) reported that they had taken no school plant courses and that another 30% had taken six or less semester hours in school plant. Obviously, many individuals with training and experience in educational administration become facilities specialists by appointment and literally train themselves through self-study and attendance at conferences, clinics, workshops and institutes. Since this is reality, a very valuable service can be performed by providing a continuing education program for facilities practitioners in locations conveniently accessible to them. The purpose of this section is to make suggestions regarding a continuing program of career development for educational facilities specialists.

Program Goals

CEFPI has provided international and regional conferences for a number of years through its international and regional organizations. More recently the council has focused on current problems and issues in an attempt to help the facilities specialist respond more quickly to changing challenges and conditions facing education. To provide direction to a very badly needed on-going program of continuing education for facilities planners, the following goals are presented:

1. To assist facilities specialists in the identification and understanding of their common problems of planning and managing educational facilities.

2. To aid practicing facilities planners and managers to develop the essential skills necessary to implement new and developing practices in the field.

3. To provide opportunities for the facilities specialists to stay abreast of new developments and to keep pace with the state-of-the-art in their fields.

4. To alert the facilities specialists to developing trends and issues in education and their implications for the planning and management of educational facilities.

5. To provide the opportunity for self-renewal through the provision of a wide variety of meaningful career development experiences.

Suggested process goals to augment the above goal statements are as follows:

1. To provide opportunities during international conferences for facilities specialists to hear leading experts discuss appropriate and timely issues in educational facilities planning and management.

2. To provide the time and setting at international conferences for groups with common interests within the Council to discuss topics relevant to their specialization or interest.

3. To schedule visits and hold discussions at outstanding local educational facilities while attending international conferences.

4. To organize and conduct skill institutes both before and after international conferences on some subject relevant to the career development of educational facilities specialists.

5. To organize and conduct regional skill institutes before and/or after conferences held by CEFPI regional groups.

6. To conduct workshops on current problems and issues jointly planned and sponsored by CEFPI regional organizations and CEFPI.

7. To encourage and assist CEFPI regional organizations in organizing and conducting regional conferences to focus on relevant current problems and issues.

Suggested Guidelines

If there is an absolute certainty in education, it is that education will change. Like the wind, it will blow from a different direction tomorrow. This is to say that the very nature of education suggests that its professionals must respond quickly to the ever-changing pressures and challenges which form its inherent characteristics. It is unlikely that a static set of guidelines can meet the challenge this important matter presents. However, the following suggestions are provided:

1. Topics for international and regional conferences should be timely and practical, and should deal with critical issues.

2. Programs for institutes, workshops and seminars should be designed by an ad hoc committee of practitioners to whom the program is directed.

3. Short term clinics and workshops should be geared to current critical issues and should be planned for a period of one to three days.

4. There should be no exams, no grades and no attendance requirements.

5. Annual residence seminars of five to ten days length should be designed and conducted each year to provide opportunities for practitioners to gain knowledge and skills relevant to their specialization. Proposals should be received from institutions of higher learning to receive

endorsement and approval for council sponsorship. These seminars should provide certificates of achievement for those who complete them and should provide the option of graduate credit or noncredit.

5. All institutes, workshops and seminars should be staffed by outstanding professors.

7. Open enrollments should be allowed except for residence seminars.

8. An ad hoc committee on long range program planning should be appointed to plan ahead for the annual conference programs of the council and provide input on relevant topics to regional organizations, as well. A five year plan should be maintained on a current year-to-year basis.

9. A professional assistant to the Executive Director (paid or non-paid) should be appointed to be responsible for planning, organizing and conducting the institutes, clinics and workshops. An ad hoc committee on Career Development Programs should be appointed to review policies, practices and procedures and oversee program activities.

10. An ad hoc committee on professional standards should be appointed to study the role and responsibilities of the facilities specialists and provide a proto-type for job descriptions and professional qualifications for facilities specialists. This activity should provide additional insight into the kinds of programs needed.

11. The program should be self-supporting.

V

Orientation of Lay and Related Professional Groups

Purpose

Many groups sooner or later become involved in either creating or contributing to educational facilities problems. Most groups would prefer, however, to be a significant contributor to problem solutions when the facts are known. Many school administrators complain about an uninformed lay public and criticize planning team members from other professions for failure to understand how to solve facility planning problems. An effort must be made to inform lay and related groups about educational facilities in a more systematic way.

The purpose of this section is to provide suggestions for a systematic orientation program for lay and related professional groups.

Lay Organizations

Among the lay groups of major significance are the Parent-Teacher Association and the National School Boards Association. These two organizations have structures that extend to the school district and the individual school.

Several suggestions appear to be pertinent:

1. CEFPI should establish liaison with the National Parent-Teacher Association and the National School Boards Association.

2. CEFPI should offer to sponsor conference speakers and leaders to discuss current facilities problems and issues. A speaker's bureau should be set up from volunteers.

3. CEFPI should offer institutes or workshops before and after national and state level conferences. Such institutes and workshops should be designed jointly by CEFPI liaison members and lay organization representatives.

4. CEFPI regional organizations should be encouraged to establish liaison with state level PTA and school board associations. The CEFPI regional groups should be encouraged to provide a speaker's bureau and to develop a working relationship on similar matters.

Other Professional Groups

A pattern of working relationships similar to the lay group should be employed with such organizations as the AIA, professional engineers, ASCD, ALA and many others. The limitations are obvious. Only the council leadership can determine where to draw the line on new contacts and where existing working patterns are satisfactory

Related Professional Groups

The AASA, NASSP, NESPA, ASBO and CEFPI have joined together in an administrative team. Many new ideas of

cooperation have been developed under the leadership of the executive secretaries of these organizations. Each has been concerned with the problem of providing continuing education programs for its members. Efforts have been made to obtain participation by representatives of each of the above named groups in the AASA's National Academy of School Executives. In this way, the membership of these groups could be involved in an exchange of information and provide orientation to selected groups regarding problems and issues of common concern. The following suggestion has been made:

> CEFPI should join with AASA, if possible, in the National Academy of School Executives (NASE). If possible, a CEFPI member should be appointed to the NASE board whereby CEFPI could provide input to NASE seminars as well as contribute human resources to the Academy program.

Professors who teach school plant courses should benefit from the NASE seminars and from the annual residence seminars proposed for CEFPI sponsorship. Additionally, seminars for professors teaching school plant courses could be separately organized and conducted by CEFPI.

Preservice and Inservice for Architects

Preservice training. The most effective way to provide preservice training for architectural students would be cooperative educational experiences with colleges of education and to work with real world school problems.

Arrangements should be made between the colleges of education to exchange students for various learning experiences. Some, but not all, of these experiences would be as follows:

1. To familiarize the student with various roles in the educational establishment. That is, the role of teachers, principals, various administrators, superintendents and boards of education.

2. To familiarize the student with the current educational methods and possible future educational processes as may be available.

3. To emphasize the aspect of education that requires planning for new facilities. In this regard, emphasis should be placed upon learning the general processes of educational planning as a first step.

To arrange for real work experiences in the field of education; some, but not all, experiences could be as follows:

1. To arrange a cooperative work experience with a school district that has facility modernization or new facility needs. Such a work experience should be carefully coordinated between the school system and the architects commissioned for the work. The architectural student would become an observer and listener to the many steps involved in planning for the design of educational facilities.

2. To arrange for the architectural student to spend a significant amount of time with a school system to observe all parts of it. It is suggested that in visiting the various

levels of the school that the following processes be followed:

a. At the elementary level the architectural student attach her/himself to a class at each level. A minimum of two days, and preferably four days, should be spent at each class level. The architectural student should spend the entire time with the class observing and participating as much as possible in all functions. Careful reading and observing of all curriculum materials are important.

b. At junior and senior high level it is suggested the architectural student attach himself to a student and accompany this boy or girl through all the experiences of his/her school day. Attachment should be at each grade level and should be for a minimum of two days with each student. Become familiar with all curriculum materials and teaching methods.

c. The architectural student should spend a minimum of one week at a district level office observing all functions which take place.

The architectural student should be provided with a bibliography of selected reading materials concerning education and educational planning. Emphasis should be placed upon educational planning and obtaining as broad a knowledge as possible concerning the whole of education.

Inservice Training

Rapid Change. The rate of change is singly the most important factor affecting our total lives, including our work world. There is no time when an architect can assume that he has mastered all the arts and, in essence, "coast on his laurels." The coasting period will be very brief. From the beginning of the architect's career he must undertake carefully thought out inservice training programs and must continue these as long as he presents himself as a qualified architect to handle the planning and design of educational facilities. Some ingredients of a proper inservice program, but not necessarily all of them, are as follows:

1. Pursue a regular program of reading professional papers and documents. The architect who desires a specialty in educational planning and facilities design should make certain that he not only equips himself with the very latest knowledge in building technology and furnishings, but also equips himself with the fullest possible knowledge concerning the "whole" of education.

2. Particular emphasis should be made upon the study of future trends. "Trend" is spoken of in the broadest aspect pertaining to building technology, educational learning trends, planning trends, planning tools, all new equipment and aspects of the educational field.

3. The architect should plan for a regular program of attending educational seminars and conferences each year. Conferences should be selected that not only deal with facility design, but also deal with educational technology. Attending such conferences is as much a business expense as the office rent and, therefore, budgeting must be made to provide for these. To say, "I cannot afford this" is no different than eliminating the telephone.

4. Visitations should be made to as many school facilities as possible, particularly those designated as landmark examples of educational facility design.

5. Particular inservice training should be pursued in planning processes. The architect should make every endeavor to equip himself, or herself, with the very latest planning techniques.

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